

REMARKS

In Applicant's co-pending U.S. Serial No. 08/720,070, the Examiner has identified claims 6, 7, 8, 9 and 10 as proposed counts in accordance with 37 CFR §1.607(a)(2) and as "at least one claim" in accordance with 37 CFR §1.607(3) of the U.S. Patent No. 5,839,307 patent. Those claims are presented here as claims 6 through 10, respectively.

37 CFR §1.607(a)(1)

Applicant, in accordance with 37 CFR §1.607(a)(1) identifies that patent as U.S. Patent No. 5,839,307 issued on the 24th of November 1998 to Peter Field and Michael Lunpkin.

37 CFR §1.607(a)(2)

Applicant proposes the following Counts:

1 (Count I) A rotatable lock barrel for insertion into a lock cylinder having a bore formed therein,
2 the barrel comprising:
3 an elongated, generally cylindrically shaped barrel member having an exterior configured for
4 receipt in a bore of a lock cylinder and an interior containing an electromechanical locking member,
5 the barrel member having a recess formed therein;
6 wherein the locking member is disposed in the recess of the barrel member and is
7 substantially entirely contained within the barrel member, the locking member including a groove

8 and the locking member being movable to a position in which the groove of the locking member is
9 placed in an alignment;

10 the recess in said barrel member being configured to receive at least a portion of a movable
11 side bar of a lock cylinder to permit the side bar to move into and out of engagement with the groove
12 of the locking member for selectively permitting and blocking rotation of the barrel member with
13 respect to a lock cylinder when positioned therein;

14 an electronically powered drive mechanism located within the barrel member for moving the
15 electromechanical locking member to a position in which the groove of the locking member is in
16 said alignment.

1 (Count II) An electromechanical lock cylinder, comprising:

2 an outer shell having a bore formed therein and a cavity extending from the bore into
3 the shell;

4 a barrel disposed within the bore in the shell and being rotatable relative thereto;

5 a side bar cooperating between the shell and the barrel for selectively permitting and
6 blocking rotation of the barrel with respect to the shell, the side bar having a first portion engaging
7 the barrel and a second portion removably received in the cavity in the shell, the side bar being
8 movable relative to the barrel;

9 wherein at least one electromechanical locking member is disposed within the barrel
10 and is positionable in a barrel blocking position blocking rotation of the barrel with respect to the
11 shell, and also is positionable in a non-barrel blocking position permitting the side bar to be moved

relative to the cavity in the shell to rotate the barrel with respect to the shell;

an electronically powered drive mechanism located within the barrel and cooperating with the electromechanical locking member to selectively move the locking member from the barrel blocking position to the non-barrel blocking position in which the side bar moves out of the cavity and engages the locking member; and

control means for activating the electronically powered drive mechanism in response to an authorized attempt to operate the lock cylinder.

(Count III) A process of retrofitting a mechanical cylinder lock to form an electromechanical cylinder lock, the process comprising steps of:

providing a mechanical cylinder lock including an outer shell with a bore, a first rotatable barrel located in the bore, and a side bar for preventing and permitting rotation of the barrel within the bore in the shell;

removing the first barrel from the shell;

providing an electronically powered rotatable barrel having an exterior adapted to substantially correspond to the bore in the shell, and including:

at least one electromechanical locking member disposed in the barrel, the electromechanical locking member being positionable to permit the side bar to engage the locking member in a non-barrel blocking position which permits the barrel to rotate with respect to the shell, and the electromechanical locking member also being positionable in a barrel blocking position which blocks rotation of the barrel with respect to the shell; and

14 an electronically powered drive mechanism cooperating with the electromechanical locking
15 member to selectively move the locking member from the barrel blocking position to the non-barrel
16 blocking position in which the side bar engages the locking member to rotate the barrel and operate
17 the lock; and

18 securing the electronically powered rotatable barrel in the bore in the shell to form an
19 electromechanical cylinder lock, the lock including control means carried by at least one of the barrel
20 and bore for energizing the electronically powered drive mechanism in response to an authorized
21 attempt to open the lock.

37 CFR §1.607(a)(3)

In accordance with 37 CFR §1.607(a)(3), claim 14 of U.S. Patent No. 5,839,307 to Field, *et al.* corresponds to the proposed Count I; claim 1 of Field '307 corresponds to Count II; and claim 19 of Field '307 corresponds to Count III.

First, Applicant notes that the Examiner has made various assertions that infer that the use of the phrase *at least one*¹ in the Field, *et al.* '307 patent means *a plurality or more than one*. The Examiner has cited no authority for this inference. The Examiner has also failed to demonstrate that the phrase *at least one*² as used in the Field, *et al.* '307 patent defines any number other than *one*.

¹ Claim 1 of Field, *et al.* '307, (Count II) reads, in part, "wherein *at least one* electromechanical locking member is disposed within the barrel ..." Column 9, lines 5 and 6.

² Claim 1 of Field, *et al.* '307, (Count II) column 9, lines 5 and 6.

The Examiner's attention is invited to the complete absence of authority for the Examiner's proposition that the phrase *at least one* means any number other than *one*. The Examiner's attention is also invited to Applicant's Figure 1 which displays an array of at least three electromechanical locking members 106a, 107a and 108a, all of which satisfy the definition of a locking member given by Field, *et al.* '307 in column 5, lines 1 through 8, and all or any one of which might be borne by Applicant's array of apertures 80, 82.

Second, the Examiner has written that,

"the instant specification fails to provide support for the "at least one electromechanical locking member"³

The Examiner's attention is invited to the fact that the Office has long since ruled that Applicant's armature spring constituted an "electrical operator", and to explain in a supplemental to Paper No. 52, the difference between an "electrical operator" and an "electromechanical locking member."

Third, the Examiner's attention is invited to the description of the *electromechanical locking member* given by Field, *et al.* '307:

"[a] plurality of electromechanical locking members 50, 52, 54 preferably are located within the central recess portion 42. The locking members are referred to as electromechanical because, as described below, there are moved under the force of an electronically powered drive mechanism."⁴

³ Paper No. 53, page 2, paragraph 3.

⁴ Field, *et al.* '307, col. 5, lines 65 through 67, and col. 6, lines 1 and 2.

Wholly absent from Field, *et al.* '307 is any attribution of any electromechanical characteristic or property to elements 50, 52, 54; Field, *et al.* '307 describes elements 50, 52, 54 as a passive element.

In contradistinction, Applicant's locking pin 201a is disclosed as a mechanical component made of a ferromagnetic material such as iron, that is moved under the force created by an electronically powered drive mechanism, namely coil 201b. Alternatively, Applicant's "armature 106a"⁵ contains at least one of the "grooves or slots 51, 53, 55" attributed by Field, *et al.* '307 to his "locking members 50, 52, 54."⁶ Wholly absent from Paper No. 52 is any explanation by the Examiner of why slots 51, 53, 55 in Field, *et al.* '307 convert each of elements 50, 52, 54 into "at least one electromechanical locking member", while slots 107c, 108h and grooves 105n of Applicant's electromechanical components 105D, 106a, 107a and 108a do not similarly convert Applicant's electromechanical components into "electromechanical locking members", when Applicant's electromechanical components 105D, 106a, 107a and 108a are disclosed as responding to an electrically driven motor or solenoid by exhibiting movement relative to a detent, or to a sidebar, or other obstruction?⁷

⁵ Shown in Figures 2 and 3.

⁶ Field, *et al.* '307, col. 5, lines 5 and 6.

⁷ In column 6, beginning with line 14, Field '307 suggests that "each of the locking members may individually be rotated by the drive mechanism" and in column 6, beginning with line 24, suggests that "the locking member (or members) is driven or rotated by any suitable electronically powered drive mechanism" and as two examples of such a "drive mechanism", mentions "an electromagnetic core" and "a miniature motor." Only Figure 15 shows an electromagnetic core 300 which is described in column 6, beginning with line 34, as being used by "energizing the core 300, the resulting magnetic field rotates the members from their locking position (Fig. 2) to their unlocking position (Fig. 4) ... "; while Figure 16 shows "an electromagnetic core 400 [that] is located in the barrel 130 in a location such that upon energizing of the core 400 the locking members are rotated from their locking position (Fig. 11) to their unlocked position (Fig. 13)" Column 8, line 11. Field '307 fails to

Absent any basis for the Examiner's inference⁸, paper No. 52 fails to satisfy the standard required under 37 CFR §1.104, and is incomplete to the extent that Applicant can not reasonable, and accurately comply with the requirement for Applicant's Request under 37 CFR §1.607. Accordingly, and in compliance with 37 CFR §1.104(a) and (b), the Examiner is respectfully requested to complete Paper No. 52 by preparing and providing Applicant with a supplemental Paper No. 52, containing:

- An explanation of the meaning of the phrase *at least one*.
- Identification of authority that establishes that the phrase *at least one* indicates a number greater than one under the second paragraph of 35 U.S.C. §112.
- Identification of authority that supports the Examiner's explanation in the supplemental Paper No. 52 of the meaning of the phrase *at least one* stated by the Examiner.
- A written explanation of the difference between an "electromechanical locking member" and Applicant's "armatures" and "locking pins", as those terms pertain to this application.
- A written identification of the column and line number of Field, *et al.* '307 given an explanation of any *electromechanical* property and characteristic of elements 50, 52 and 54 the difference between an "electrical element", as those terms pertain to this application.
- A written explanation by the Examiner of why slots 51, 53, 55 in Field, *et al.* '307 convert each of elements 50, 52, 54 into "at least one electromechanical locking member", while slots 107c, 108h and grooves 105n of Applicant's electromechanical components 105D, 106a, 107a and 108a do not similarly convert Applicant's electromechanical components into "electromechanical locking members", when Applicant's electromechanical components 105D, 106a, 107a and 108a are disclosed as responding to an electrically driven motor or solenoid by exhibiting movement relative to a detent, or to a sidebar, or other obstruction?

explain how cores 300, 400 might attain the "energizing" of cores 300, 400, or how one might use the energization of cores 300, 400 to either rotate locking members 50, 150 or to "selectively move" locking members 50, 150 as is stated in column 9, line 14.

⁸ See, for example, Paper No. 53, paragraph 3.

37 CFR §1.607(a)(4) - Count I

In accordance with 37 CFR §1.607(a)(4), Applicant presents pending claim 8 corresponding to the proposed Count I:

1 8. A rotatable lock barrel for insertion into a lock cylinder having a bore formed therein, the
2 barrel comprising:

3 an elongated, generally cylindrically shaped barrel member having an exterior configured for
4 receipt in a bore of a lock cylinder and an interior containing an electromechanical locking member,
5 the barrel member having a recess formed therein;

6 wherein the locking member is disposed in the recess of the barrel member and is substantially
7 entirely contained within the barrel member, the locking member including a groove and the locking
8 member being movable to a position in which the groove of the locking member is placed in an
9 alignment;

10 the recess in said barrel member being configured to receive at least a portion of a movable
11 side bar of a lock cylinder to permit the side bar to move into and out of engagement with the groove
12 of the locking member for selectively permitting and blocking rotation of the barrel member with
13 respect to a lock cylinder when positioned therein;

14 an electronically powered drive mechanism located within the barrel member for moving the
15 electromechanical locking member to a position in which the groove of the locking member is in said
16 alignment.

37 CFR §1.607(a)(4) - Count II

In accordance with 37 CFR §1.607(a)(4), Applicant presents pending claim 6 corresponding to the proposed Count II:

- 1 6. An electromechanical lock cylinder, comprising:
 - 2 an outer shell having a bore formed therein and a cavity extending from the bore into
 - 3 the shell;
 - 4 a barrel disposed within the bore in the shell and being rotatable relative thereto;
 - 5 a side bar cooperating between the shell and the barrel for selectively permitting and
 - 6 blocking rotation of the barrel with respect to the shell, the side bar having a first portion engaging
 - 7 the barrel and a second portion removably received in the cavity in the shell, the side bar being
 - 8 movable relative to the barrel;
 - 9 wherein at least one electromechanical locking member is disposed within the barrel
 - 10 and is positionable in a barrel blocking position blocking rotation of the barrel with respect to the
 - 11 shell, and also is positionable in a non-barrel blocking position permitting the side bar to be moved
 - 12 relative to the cavity in the shell to rotate the barrel with respect to the shell;
 - 13 an electronically powered drive mechanism located within the barrel and cooperating
 - 14 with the electromechanical locking member to selectively move the locking member from the barrel
 - 15 blocking position to the non-barrel blocking position in which the side bar moves out of the cavity
 - 16 and engages the locking member; and
 - 17 control means for activating the electronically powered drive mechanism in response

18 to an authorized attempt to operate the lock cylinder.

37 CFR §1.607(a)(4) - Count III

In accordance with 37 CFR §1.607(a)(4), Applicant presents pending claim 9 corresponding to the proposed Count III:

1 9. A process of retrofitting a mechanical cylinder lock to form an electromechanical cylinder
2 lock, the process comprising steps of:

3 providing a mechanical cylinder lock including an outer shell with a bore, a first rotatable
4 barrel located in the bore, and a side bar for preventing and permitting rotation of the barrel within
5 the bore in the shell;

6 removing the first barrel from the shell;

7 providing an electronically powered rotatable barrel having an exterior adapted to substantially
8 correspond to the bore in the shell, and including:

9 at least one electromechanical locking member disposed in the barrel, the electromechanical
10 locking member being positionable to permit the side bar to engage the locking member in a non-
11 barrel blocking position which permits the barrel to rotate with respect to the shell, and the
12 electromechanical locking member also being positionable in a barrel blocking position which blocks
13 rotation of the barrel with respect to the shell; and

14 an electronically powered drive mechanism cooperating with the electromechanical locking
15 member to selectively move the locking member from the barrel blocking position to the non-barrel

16 blocking position in which the side bar engages the locking member to rotate the barrel and operate
17 the lock; and

18 securing the electronically powered rotatable barrel in the bore in the shell to form an
19 electromechanical cylinder lock, the lock including control means carried by at least one of the barrel
20 and bore for energizing the electronically powered drive mechanism in response to an authorized
21 attempt to open the lock.

37 CFR §1.607(a)(5)(i) & (ii)

In accordance with 37 CFR §1.607(a)(5)(i) & (ii), with the exception of the following noun, all terms of Applicant's claims 6, 8 and 9 were previously in this application long prior to the copying of the claims of Field, *et al.* '307. No further explanation is required under 37 CFR §1.607(a)(5)(i) & (ii). The one noun that was not previously present in Applicant's parent application is: "barrel". This corresponds both structurally to Applicant's art recognized noun "plug" and "cylinder plug." Field *et al.* '307 teaches the equivalence of "plug" and "barrel" in column 3, at line 46.

37 CFR §1.607(a)(6)

In accordance with 37 CFR §1.607(a)(6), Applicant's newly presented claims 6 through 10 were presented in Applicant's parent application before the expiration of one year from the 24th of November 1998 issue date of U.S. Patent No. 5,839,307 to Field, *et al.* No explanation under 37 CFR §1.607(a)(6) is required. Applicant notes however, that as was previously explained, Applicant's Figs. 1-18, for example, disclose, *inter alia*, shell 102, cavity 102d, cylinder plug or "barrel," 70, detent,

or “side bar”, 101g, cavity 102a (to the extent that this cavity is different from the cavity 102d referred to in line 2 of claim 1 of Field ‘307), electro-mechanical locking member 105,⁹ drive mechanism 105b and control means 104. Accordingly, all elements defined in newly added claims 85 through 87, and all of the process steps defined in claim 88 are found in Applicant's specification. Retrofitting is expressly disclosed on page 4, lines 16-18, for example, as well as in lines 8-11 on page 21 and lines 4-19 of page 18 of Applicant's original specification.

First Alternative Definition Of The Interfering Subject Matter

Recognizing that neither locking members 50-54 nor 150, 152 have any disclosed structural connections with electromagnetic cores 300, 400, respectively and that movement of locking

⁹ The Examiner's attention is invited to the language of claims 14, 1 and 19 of Field ‘370:

- Claim 14 defines “an electronically powered drive mechanism ... moving the electromechanical locking members to a position” None of Field's ‘370's figures, and especially figures 15 and 16, show an “electronically powered drive mechanism” with any disclosed ability to move locking members 50 or 150.
- Claim 1 defines “an electronically powered drive mechanism ... cooperating with the electromechanical locking member to selectively move the locking members” Neither Figures 15 nor 16 of Field ‘307 show (1) cooperation between the drive mechanism and the electromechanical locking member, (2) selective movement of the locking member by the drive mechanism, or (3) the drive mechanism disclosed with the ability to “move the locking member”.
- Claim 19 of Field ‘307 states that “an electronically powered drive mechanism cooperating with the electromechanical locking member to selectively move the locking member” Neither figures 15 nor 16 show (1) cooperation between the drive mechanism and the electromechanical locking member, (2) selective movement of the locking member by the drive mechanism, or (3) the drive mechanism disclosed with the ability to “move the locking member”.

members 50-54 and 150, 152 into some sort of alignment is necessary to accommodate movement of sidebar 60, 190, and that the disclosed embodiments of Field *et al.* '307 function in the same manner and achieve the same results as an embodiment constructed with only a single locking member 50 or 150, Applicant's plurality of electromechanical locking means 101b, 105b each bearing grooves 101d, 105d that accommodate movement of sidebar 101h meet the clause "locking members including a groove and the locking members being movable to a position in which the grooves of the locking members are aligned" defined by Applicant's claim 10 and Field '307's independent claim 14. Structurally, operationally and functionally, Applicant's electromechanical locking members 101, 105 have the same structural features, perform in the same manner and provide the same results as electromechanical locking members 50-54, 150 and 152 of Field '307.

Second Alternative Definition Of The Interfering Subject Matter

Recognizing that claim 14 of Field '307 does not include a sidebar in the definition of the "rotatable lock barrel, and that the disclosed embodiments of Field *et al.* '307 function in the same manner and achieve the same results as an embodiment constructed with only a single locking member 50 or 150, Applicant's structure as illustrated, by way of example, in Fig. 8g, provides a multi-component assembly with such "locking members" as armature 105d and the unnumbered spool for Applicant's coil 105b each providing grooves that "are aligned" as defined by claim 14 of Field '307, column 10, line 28, "to permit the side bar to move into and out of engagement with the grooves of the locking members for selectively permitting and blocking rotation of the barrel member with respect to the lock cylinder", as stated in column 10, lines 31-34 of Field '307. These locking

members and their grooves operate in conjunction with Applicant's sidebar, to provide the same structure, perform in the same manner and achieve the same result as locking members 50-54, 150 and 152 of Field '307.

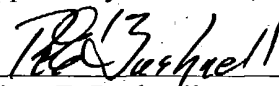
Claims 6 through 10 (corresponding to claims 85 through 88 in Applicant's parent application) were copied substantially verbatim from U.S. Patent No. 5,839,307 issued on 24 November 1998 to Peter Field and Michael Lunpkin, correspond to previously presented Claims 60 through 63. As was explained in Applicant's Second Supplemental Amendment of the 17th of August 1999, claim 6 (parent claim 85) is copied from claim 1 of the Field '307 patent by the addition of a comma in the preamble; claim 7 (parent claim 86) is copied from dependent claim 2 of Field '307; claim 8 (parent claim 87) is copied from claim 14 of Field '307, with the number of the locking member changed to singular; and claim 9 (parent claim 88) is copied verbatim from claim 19 of Field '307, and claim 10 is copied verbatim from claim 14 of Field '307.

Same Patentable Invention Under 37 CFR §1.601(n)

In accordance with 37 CFR §1.637(c)(3)(ii), Counts I, II, and III define the same patentable invention as Applicant's pending claims 6, 8 and 9, in satisfaction of the two-way test for determining whether Applicant and Patentee claim the "same patentable invention" as that phrase is defined by 37 CFR §1.601(n) promulgated pursuant to 35 U.S.C. §135(a).

In view of the foregoing amendments and remarks, all claims are deemed to be in condition for allowance. Entry of these amendments prior to calculation of the filing fee is requested. Should questions remain unresolved however, the Examiner is requested to telephone Applicant's undersigned attorney.

Respectfully submitted,



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